



The State of New Hampshire
Department of Environmental Services



Clark B. Freise, Assistant Commissioner

February 2, 2017

The Honorable Kevin Avar
Chair, Senate Energy and Natural Resources Committee
State House, Room 100
Concord, NH 03301

RE: SB 127 – An Act relative to dissolved oxygen concentration water quality standards.

Dear Chair Avar and Members of the Committee:

Thank you for the opportunity to comment on SB 127, which would eliminate the criteria for dissolved oxygen saturation in surface waters, authorize the New Hampshire Department of Environmental Services (NHDES) to adopt rules for a dissolved oxygen concentration criteria in freshwater and saline waters, and prohibit the use of 7Q10 flows for determining effluent limits for nutrient discharges. NHDES generally supports the legislation, but opposes some of the language, as explained below.

Dissolved Oxygen (DO) is the amount of gaseous oxygen dissolved in water. DO is important in a number of ways, primarily in the health and survival of aquatic creatures. Reduced DO causes decreased growth of aquatic organisms, shifts in habitat selection, increased vulnerability to predation, increased disease, altered food webs, and death.

New Hampshire Water Quality Standards (found in Env-Wq 1700) set a minimum for DO, which is protective of aquatic life. DO is measured in two ways. DO saturation, which is measured as percent, is a relative measure of the amount of oxygen that is dissolved or carried in water. DO concentration is the actual amount of DO in the water as measured in terms of mass per volume, typically mg/l. The attached handout shows New Hampshire's current standards for DO saturation and concentration as well as those from surrounding states.

NHDES supports the concept of reviewing the criteria, and moving some of the criteria from statute to rule which would facilitate updates based on the latest science. To our knowledge, the current DO criteria protects aquatic life from harmful effects. It should be noted that confirming that conclusion is complex, and is already under study by the Water Quality Standards Advisory Committee - WQSAC (an open committee of stakeholders and experts who advise NHDES on water quality issues) which recently formed a DO Workgroup to address this very issue.

NHDES opposes the elimination of the ability to set criteria for DO saturation, as proposed in this bill. The following changes should be made to the language in the section II, on page 1 line 21 and 22: "... water quality standards in a manner consistent with EPA guidance on dissolved

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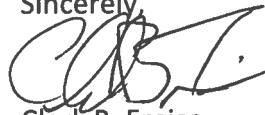
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oxygen water criteria” The same change should also be made on page 2 lines 4 and 5. These suggested changes are in response to the removal of the DO saturation criteria proposed on page 1, lines 9-10. The NHDES and the WQSAC workgroup should have the flexibility to look at all measures and to examine every facet of the issue. While New Hampshire’s standards for DO concentration were set more recently than the DO saturation standards, both were developed using EPA guidance and/or scientific publications at that time. Interestingly, the most recent state to change its standards (Florida) chose to switch from concentration to saturation as the key measure of DO.

Thank you again for the opportunity to comment on SB127. If you have further questions or need additional information, please contact Ted Diers (ted.diers@des.nh.gov, 271-3289) or Gregg Comstock (gregg.comstock@des.nh.gov, 271-2983).

Sincerely,

A handwritten signature in black ink, appearing to read 'C.B. Freise', written over a horizontal line.

Clark B. Freise

Assistant Commissioner

Enclosures

cc: Senators Gray and Watters